

by a collet bearing a weight toward the base portion.” In the portions of Kotato cited by the Examiner, Kotato discloses that the film suction-holding pad 34 is used when a film-shaped die-bonding material 2 is bonded onto a lead frame 7. However, this is not the claimed invention: Kotato’s pad 34 and the compression-bonding element 104 are not the claimed weight-bearing collet and do not act together as claimed.

The Examiner also states that Kotato’s method discloses the final curing of the die-bond paste in applicant’s invention. However, Kotato neither discloses nor suggests “finally curing the conductive die-bond paste in a thermostat without pressurizing by the collet.” In the portion of Kotato cited by the Examiner (col. 4, lines 6-19), Kotato discloses that the mechanism presses the film-shaped die-bonding material against the support member during final bonding. This is not the claimed invention. In the second and third portions of Kotato cited by the Examiner (col. 6, lines 27-67) and (col. 7, lines 1-10), Kotato discloses that the semiconductor chip is temporarily and finally bonded to the film-shaped die-bonding material on the lead frame using the individual bonding elements 34 and 104. Applicant claims finally curing the conductive die-bond paste in a thermostat without pressurizing by the collet. Additionally, since Kotato does not disclose the thermal resistance (90°C/W or lower) of the semiconductor laser device in claim 2, Kotato does not anticipate dependent claim 5.

The Examiner rejected claims 2 and 6 under 35 USC 103(a) as being unpatentable over the combination of Kotato and Inaba U.S. Patent No. 6,255,742. Applicant also respectfully traverses this rejection. The combination constructed by the Examiner is not the claimed invention, so the invention could not have been obvious, even in hindsight. The Examiner states that Kotato discloses the temperature used in curing the bond and semiconductor in Tables 1, 5 and 6. These tables present experimental results showing a relationship between the number of reflow crack occurrences and the bonding-temperature, load and time, the Ag content of the film, and drying temperature and time of the film. Kotato discloses neither the thermal resistance

(90°C/W or lower) of the semiconductor laser device as in claim 2, nor the content ratio of silver (82% - 84%) in the conductive die-bond paste as in claim 6.

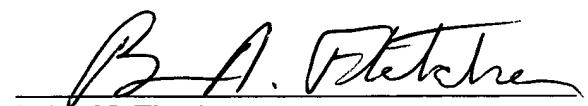
Moreover, while the Examiner further states that Inaba discloses the amount of die-bond surface of semiconductor laser chip (col. 8, lines 62-67), what Inaba discloses here is the formation of the heat dispersion plate. Inaba discloses neither the creep-up height as in claim 3 nor the content ratio for the silver in the conductive die-bond paste as in claim 6. Furthermore, even if the resulting combination suggested by the Examiner included all the claim limitations of claims 2 and 6, there is no evidence of the necessary motivation to combine.

Finally, the Examiner objected to Claims 3 and 4 as being dependent upon a rejected base claim. However, in view of the above arguments, each of the claims in this application is in condition for allowance. Accordingly, applicant solicits early action in the form of a Notice of Allowance.

In the event the transmittal letter is separated from this document and the Patent and Trademark Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing Docket No. 204552021700.

Respectfully submitted,

Dated: September 20, 2004

  
Brian N. Fletcher  
Registration No. 51,683

Morrison & Foerster LLP  
1650 Tysons Boulevard, Suite 300  
McLean, Virginia 22102  
Telephone: (703) 760-7796  
Facsimile: (703) 760-7777